

SHORT COMMUNICATIONS

STUDY OF BLOOD GROUPS IN HIV SEROPOSITIVE PATIENTS

*SK Sayal, *AL Das, **SK Nema

Blood groups in 104 cases of HIV infection and 300 normal persons were determined. A relatively increased incidence of HIV infection was observed in persons with blood group O and relatively lower incidence in blood group B. Incidence of HIV infection was also low in Rh negative subjects. These results suggest a possible relationship between the incidence of blood group and the natural defence mechanism against HIV infection.

Key Words : Blood groups, Human immunodeficiency virus Infection

Introduction

With the discovery of blood groups by Landsteiner and subsequent great advancement in its study, many workers have tried to find out a possible relationship between the incidence of these blood groups and the incidence of various diseases. Strong association have been described between peptic ulcer and blood group O,¹ gastric carcinoma and blood group A,² toxemia of pregnancy and blood group O,³ carcinoma cervix and blood group AB,⁴ and similar other associations.

In the field of Dermatology and Venereology possible association has also been sought. These include lichen planus and blood group A, pemphigus and seborrhoeic dermatitis and blood group B, vitiligo and blood group AB.⁵

There is no study of blood groups in HIV infection cases to the best of our knowledge. In this study, we made an attempt to determine any association between blood groups and HIV infection.

Material and Methods

One hundred and four HIV infection cases from Armed Forces who were admitted at HIV Surveillance Centre, Command Hospital, Southern Command, Pune, during the period from October 95 to June 96 served the material for the study. The diagnosis in these cases was made by ELISA and Western Blot tests. The control group was obtained from the records of 300 consecutive Armed Forces personnel maintained at blood transfusion department of Armed Forces Medical College, Pune. The ABO blood group was done by a simple Tile Method. A drop of blood was mixed with grouping sera of Anti A and Anti B and blood group was determined in the usual manner. The results were compiled and data analysed.

Results

The observations are recorded in Tables I and II. All patients were male. The youngest patient was 19 years and the oldest 57 years of age. The incidence of blood group A, B, AB and O in the HIV infection cases were found to be 28 (26.9%), 26 (25.0%), 10 (9.6%) and 40 (38.5%) and compared to 80 (26.7), 95 (31.7%), 28 (9.3%) and 97 (32.3%) in controls. The incidence of Rh positive and Rh negative blood groups in HIV infection

*From the Department of Dermatology and Venereology, Command Hospital (SC), Pune, and **MH CTC, Pune, India.

Address correspondence to : Col S K Sayal

Table I. Distribution of ABO blood groups among controls and HIV seropositive patients

Blood group	Control		HIV seropositive patients	
	Number	Percentage	Number	Percentage
A	80	26.7	28	26.9
B	95	31.7	26	25.0
AB	28	9.3	10	9.6
O	97	32.3	40	38.5
Total	300	100	104	100

Table II. RH blood groups among control and HIV seropositive patients

Blood group	Control		HIV seropositive patients	
	Number	Percentage	Number	Percentage
Rh positive	285	95.0	102	98.1
Rh negative	15	5.0	2	1.9
Total	300	100	104	100

cases were found to be 102 (98.1%) and 2 (1.9%) as compared to 285 (95.0%) and 15 (5.0%) in controls respectively.

Discussion

The results obtained through this study show that subjects with blood group O are more susceptible to HIV infection as compared to those with other groups. On the other hand, subjects with blood group B and also those who are Rh negative show decreased susceptibility to HIV infection.

These results point to a possible genetic link between inheritance of blood groups and natural defence mechanism against infection. Clark had suggested that the level of natural antibodies in man might be different in various A B O types.¹ It may be assumed that B genotyped persons have highest degree of natural resistance against HIV infection whereas O genotyped persons have lesser degree of such natural resistance. Similarly there was significantly lower incidence of HIV infection in Rh negative individuals (1.9% as against 5.0% in general population). These observations might mean that Rh negative subjects are more resistant to certain

pathological conditions despite that hazards encountered in infancy.

From this study it is concluded that inheritance of blood groups and consequent inheritance of certain immunological features may influence the development of HIV infection. However, larger study involving more number of patients are required to arrive at more definite conclusion.

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